

DNet links laboratories, ranges, test resources

POTENTIAL NEW PLAYERS SEE DNET IN ACTION



DNet talk—Ken Blanchard of Raytheon (left), Bruce Odell from Fort Irwin, and Mel Foremaster, technical director at the Naval Strike Warfare Center, NAS Fallon, discuss what DNet might do for them.



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Nine NAVAIR labs, nearly 3,000 miles apart, linked in a single, seamless network; that's DNet.

This network of labs and ranges, formally known as the NAVAIR Defense Network, is cross-site, cross-platform, and cross-organization connected. These nine labs represent starting point for the ultimate DNet capability.

Coast-to-Cpast RDT&E

NAVAIR representatives are talking with the Army, Air Force, and private sector aerospace firms about additional links in the DNet chain.

Eileen Shibley, DNet team leader, said the network standardizes test methods and unites the technical and social aspects of the various laboratory and range cultures at the NAVAIR facilities at China Lake, Point Mugu, and Patuxent River .

Over time, DNet is envisioned as a coast-to-coast research, development, test, and evaluation (RDT&E), and training network, capable of securely integrating and sharing tactical data, video, audio, telemetry, and time, space, and position information (TSPI).

DNet is the collection of communications infrastructure and common tools of what will be a nationwide network focused on RDT&E of network centric warfare (NCW) capabilities. It already exists in a secure mode and moves data from coast-to-coast at lightning speeds.

The DNet runs over the Defense Research and Engineering Network (DREN) which is managed by the DoD High Performance Computing Modernization Office (HPCMO).

DNet Day Tour

Shibley recently gave a tour of the China Lake nodes on the DNet to Mel Foremaster, technical director at the Naval Strike Warfare Center at NAS Fallon, Nev.; Ken Blanchard of Raytheon in Tucson, Ariz.; and Bruce Odell from Fort Irwin. This was part of a continuing effort to showcase the capabilities of DNet and attract more labs, ranges, and industry as links on the net.

"One of our goals from the outset was to merge existing, but differing, methodologies, and capabilities," Shibley said. "We weren't trying to make every lab look the same. The goal was, and still is, inter-operability. We'll use what's in place as much as we can."

While the Test Control Center for all DNet events is located at the China Lake Land Range, the network architecture and equipment commonality makes it possible to control a test from any one of the nine nodes. Every node has tactical radio, video, and voice conferencing ability and encryption devices needed to be the test controller regardless of which physical location is actually hosting the test.

For example, three sites — Patuxent River, China Lake, and Point Mugu — participated in the simulation of a missile strike mission, flown by a P-3, and another simulated launch of an air-to-air missile during the recent DNet tour.



Tour break—*DNet guides Elaine Jensen, Eileen Shibley, John Netzer (second from left) and Wayne Doucette, paused with visitors at the DNet display in China Lake's Michelson Laboratory.*

With Test Control at China Lake, a P-3 Orion was simulated in the Maritime Surveillance Aircraft facilities. At Patuxent River, an E-2C Hawkeye was simulated in the E-2C Systems Test and Evaluation Laboratory and the hostile air combat target was simulated by the Air Combat Environment Test and Evaluation Facility. At Point Mugu, an F-14 Tomcat simulation was piped in by the F-14 Weapons System Integration Center. Back at China Lake, the F/A-18 Hornet was simulated by the Advanced Weapons Lab (AWL). At the Integrated Battle Space ARena (IBAR) the seeker head from a Sidewinder was mounted in the hardware-in-the-loop Carco table to simulate the flyout after launch from the F/A-18.

Expanding the Net

The DNet team is looking to the future, not just the here and now. Plans include building on the successes and continuing efforts to add new links to the DNet chain of labs and ranges.

"We're trying to make our environment more like the real world," said Shibley.

A node at the Navy's Desert Ship located at the Army's White Sands Missile Range is a likely next step. A tie-in to the F-15 lab at Eglin Air Force Base is another strong possibility in the near future. Other potential DNet nodes are NAVAIR's Training Systems Division in Orlando, Fla.; Lockheed-Martin in Fort Worth, Texas; the Army's Aberdeen Proving Grounds, and the Maritime Battle Center Integration Labs.

The possibilities for expanding DNet from this current nine-lab backbone are vast, as are the probabilities of customers who need to test in a network centric environment.

Today's fully integrated network has demonstrated the capability to run real-time NCW test operations. DNet combines live, virtual, and constructive action to create a synthetic battle environment allowing programs to study, test, or evaluate NCW concepts under controlled conditions.

Just as simulation capability made it possible to drastically reduce the number of test launches in developing new missiles, so will the capabilities and evolution of the DNet make evaluating and testing NCW concepts easier and cheaper.

Thanks to the DNet and other simulation tools at NAVAIR, test conductors can add live elements to their simulations. Such elements enhance simulations and produce results that may match a real-world engagement more closely than what would be possible using only computers. It will still be faster, cheaper, and better than similar efforts requiring massive use of real-world assets.

On the horizon for DNet is not only an expanded network, but increased participation in fleet battle experiments, an element of DoD's Millennium Challenge 02 exercises next year. Leaders of the project are also exploring opportunities to collaborate with other programs, facilities, and commands in the years ahead.

DNet is hooked up and ready to go into the future of network centric warfare, providing continued support to the warfighter.

